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No.	Name of the Place.	Locality.	Latitude, North.	Longitude, East of Greenwich.	Variation. Date.	West.
CAUCASUS AND ASIA MINOR.						
1	Tiflis . . .	Height in the Governor's Garden . . . . .	41 41 4° 0'	44 50 39		° °
		A place near it, south of the Catholic Church . . . . .	41 41 27° 4'			
2	Piati-gorsk . .	Alexandrov's Spring . . . . .	44 2 39° 3'	43 5 8		
3	Kizlovodsk . .	Centre of the Fortress . . . . .	43 54 21° 0'			
4	Tzarskie Kolodzi .	· . . . .	41 27 57° 7'			
5	Jar, or Novaya Zakatali . .	· . . . .	41 37 40° 6'			
6	Nukhki . .	· . . . .	41 11 46° 3'			
7	Akhältzikeh . .	Second Gate of the Citadel . . . . .	41 39 4° 7'			
8	Kars . . . .	In the Fortress . . . . .	40 37 1° 7'	43 9 2		
9	Ardagau . .	Near the Fortress, the House of the old Caravanserai . . . . .	41 7 15° 9'	42 48 24		
10	Gúmrí . . .	Close to the Lazaretto Surgery . . . . .	40 46 57° 6'	43 46 54		
11	Hasan Kal'eh . .	· . . . .	39 58 47° 4'			
12	Erz-Rúm . .	· . . . .	39 55 16° 1'	41 18 31		
13	Bábiurt . .	· . . . .	40 15 36° 5'	40 8 48		
14	Kalkit chiftlik .	· . . . .	40 8 2° 6'	39 10 23		
FEDEROW'S DETERMINATIONS ON ARARAT.						
15	· . . . .	Point of Little Ararat . . . . .	39 39 10° 6'	44 24 34		
16	· . . . .	Foremost point of Great Ararat . . . . .	39 42 24° 17'	44 17 53		
17	· . . . .	Hindermost point of Ditto . . . . .	39 42 21° 93'	44 17 38		
18	· . . . .	Convent of St. Jacob . . . . .	39 46 12° 10'	44 21 52		
19	· . . . .	Village of Bajád . . . . .	39 52 38° 73'	44 31 5		
20	· . . . .	Point of the Hill of Alagetz . . . . .	40 31 35° 65'	44 11 23		

III.—*On the recent Russian Expeditions to Novaïa Zemlia.* By Professor K. E. von BAER.

[Abridged from the *Bulletin de l'Académie Impériale de Sciences de St. Petersbourg.*]

While our enterprising countrymen in the west are gradually prosecuting discovery on the northern shores of America within the arctic circle, it may not be uninteresting or uninstructive to turn our eyes to the east, and observe what our active rivals in the polar regions, the hardy Russians, are doing towards the improvement of the geography of the more northern lands that lie immediately adjacent to their own coasts;—and with this view, as also with the object of enriching our Journal with some valuable geographical information, an outline is subjoined of the recent expeditions to the islands of Novaïa Zemlia, abridged from several communications made by Professor Baer, during the past year, to the Academy of Sciences at St. Petersburg, and accompanied by a chart showing the *actual* outline of its coasts, as traced by the

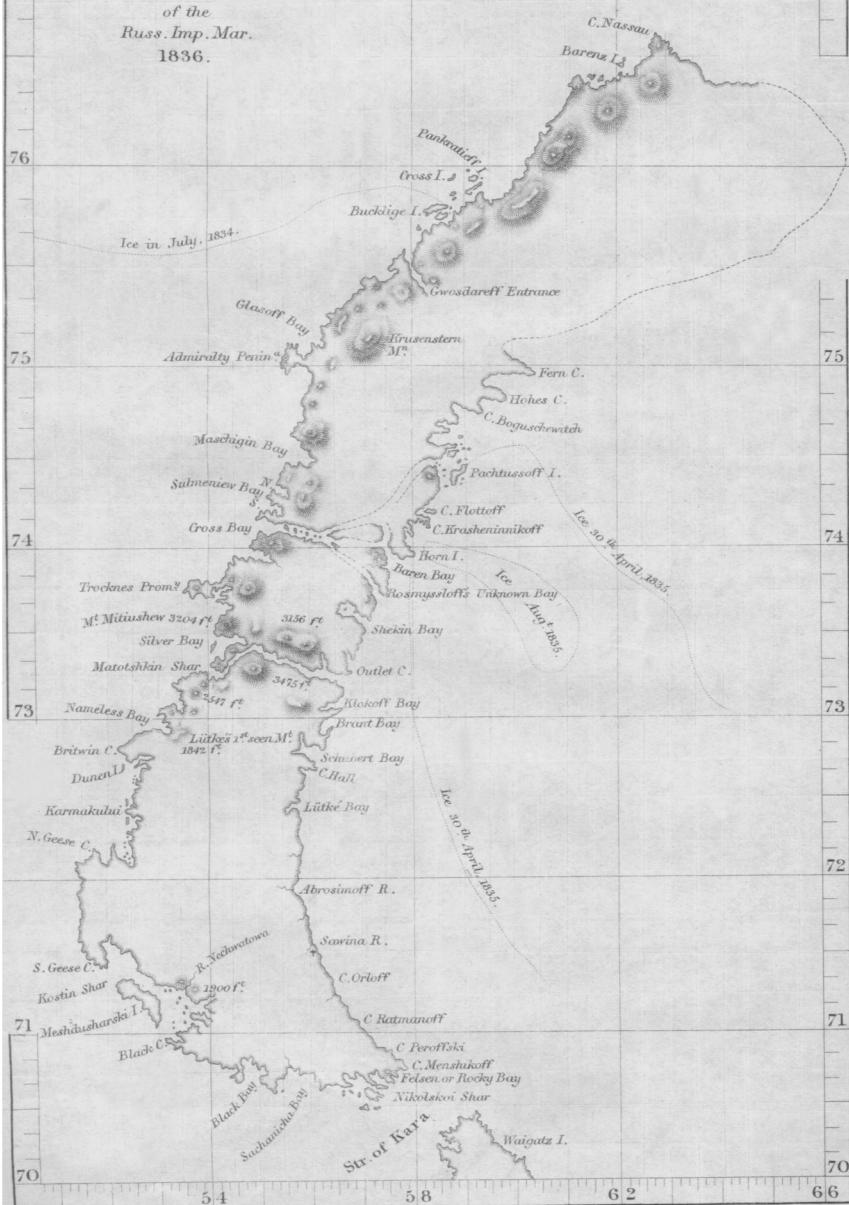
54

58

62

66

Map of  
NOVAIA ZEMLIA,  
by  
Ziwolka,  
of the  
Russ. Imp. Mar.  
1836.



pilot Ziwlka, from the latest examinations, by which it will be seen that more than the eastern half represented on our maps has no existence in reality.—Ed.]

THE first discoverer of these islands, as far as is known, appears to have been Stephen Burrough, who in the year 1556 reached Waigatz Island; this being only separated from Novaïa Zemlia by a strait thirty miles wide, there can be little doubt but that he saw its southern coast. Forty years later Barentz and the crew of a Dutch vessel wintered on the islands, and in the seventeenth century the Dutch are said to have pushed some distance to the eastward; but the eastern coast does not appear to have been approached before the time of Loshkin, a walrus-fisher, who in 1742 perished near the river, named after him the Sawina, in  $71^{\circ} 30' N.$  lat. Twenty years later his countryman Rosmysisloff penetrated through the Matotshkin-Shar, a strait so called extending in an east and west direction about forty-five miles long by three broad, which in the parallel of  $73^{\circ} 20'$  divides the length of Novaïa Zemlia into two nearly equal portions.

From 1762 till the year 1819 no expedition is on record, yet, doubtless, its shores were visited annually by seal, whale, and walrus-fishers; but between that and the year 1824, five successive exploring voyages were ordered by the Russian government. Four of these were under the command of Lieutenant, now Admiral, Lütke; yet all the skill and perseverance of this officer could not effect the desired object, namely, to explore the eastern shores of the islands.

The attempt, so often frustrated, to survey the shores of Novaïa Zemlia, would probably have been abandoned but for the enterprise of Mr. Brant, a merchant of Archangel, who, desirous of restoring the former trade along the northern coast of the continent, from the White Sea to the gulf of Obi, and of establishing the walrus-fishery on the eastern shore of Novaïa Zemlia, fitted out three vessels commanded by experienced officers. One vessel, commanded by the Master Pachtussoff, was to sail through the strait of Kara, and to examine the eastern shore of the islands. The second, under Lieutenant Krotov, was to keep on the west coast as far as the entrance of the Matotshkin-Shar, then working through the strait, to steer for the gulf of Obi, or the mouth of the Yenisei. The third was merely to fish for walrus on the west coast, in which she was successful.

Quitting Archangel together on the 13th of August, 1832, Pachtussoff separated in a fog from Krotov in the White Sea; they rejoined off Kanin Noss, and again parted for their respective stations, since which nothing has been heard of the latter, but the wreck of a large ship found in 1834 by Pachtussoff, at the

western entrance of the Matotshkin-Shar, leaves no doubt as to the fate of Krotoff and his crew.

Pachtussoff was more fortunate; he reached the south shore of Novaïa Zemlia, and, steering to the eastward, he met with so much ice that he was obliged to take up his winter-quarters on the 12th September in Felsen or Rocky Bay; and employed himself and his crew for the dreary months he remained here as usual with persons in similar circumstances. On the 6th May a heavy snow-storm occurred, and lasted three days, which M. Baer observes is remarkable for its great extent, having learnt from Mr. Helmersen, who was at that time travelling in the Ural mountains, that it was felt throughout the whole extent of that range as far as the parallel of 48°, a distance of nearly 1500 miles from the coasts of Novaïa Zemlia.

On the 6th July Pachtussoff profited by a clear sea in the Strait of Kara to examine in his boat the eastern coast as far as a small river in 71° 30' N., now named the Sawina, from the circumstance of the cross left by Ssawa Loshkin, who perished in 1742, having been found there.

On the 26th July, ten months from their arrival, the vessel was extricated from the ice, and left Felsen Bay, and they continued to the northward along the eastern coast, at one time detained in Lütké's Bay in 72½° N. for eighteen days. On leaving it they met with an iceberg, grounded in eleven fathoms, and on the following day, August 25, Pachtussoff entered the Matotshkin-Shar, having surveyed the eastern coast of the southern island.

At the western outlet of the strait he encountered a heavy gale of wind, which obliged him to run for shelter to Petchora on the Russian coast, where on the 15th September the vessel was wrecked, and he returned by land to St. Petersburg.

The following year, 1834, the Russian government sent two vessels under the command of Pachtussoff and the master Ziwlodka to follow up these discoveries. They sailed from Archangel on the 5th August, pursued different courses along the shores of Novaïa Zemlia, and met again at the western entrance of the Matotshkin-Shar. By the 26th September they contrived to effect their passage to the eastern outlet of the strait, but there the closely-packed ice compelled them to retreat to their winter-quarters, near the western end, which they occupied on the 20th October. In the following spring they constructed sledges; Pachtussoff completed the survey of the strait, while Ziwlodka with great exertion pushed 100 miles to the northward along the east coast as far as Cape Flotoff, but want of provisions obliged him to return.

Pachtussoff, who had by this time completed a boat, started on

the 12th July to the northward along the west coast, and met with the first ice off Admiralty Peninsula on the 8th July; two days after the ship was nipped and went to pieces; the crew were saved and proceeded to the northwards, dragging their boats over the fields of ice as far as Bucklige Island, in  $75^{\circ} 45' N.$  The persevering Pachtussoff here set about surveying the neighbouring islands and coasts as far as  $76^{\circ} N.$  when a walrus-fisher approached the coast, rescued them from imminent peril, and carried them back to their winter-quarters. On the 26th August Pachtussoff started for the east coast, and explored as far as the island which bears his name,  $74\frac{1}{2}^{\circ} N.$ , when the ice compelled him to retreat, and he returned to Archangel, where shortly after his arrival he died.

The ardour of M. Baer in natural history would not permit the examination of these islands to remain in this imperfect state. By his representations another expedition, being the eleventh to these shores, was fitted out under the pilot Ziwlka, accompanied by MM. Baer and Lehman as naturalists, and sailed from Archangel on the 1st July, 1837: touching on the coast of Lapland, they reached the western entrance of the Matotshkin-Shar on the 29th, where they found the sea in high latitudes clear of ice. With some difficulty they succeeded in penetrating to the eastern end of the strait, but stormy weather drove them back to their former anchorage. Excursions were made in various directions to explore the natural history of the country, &c. On the 16th August they quitted the strait and steered to the southward, examined Nameless Bay in lat.  $73^{\circ}$ , and proceeded round the western extreme of the land to the strait on the S.W. coast called Kostin Shar, which was found studded with small islands; here they ascended the small river Nechwatowa into the interior, but, the weather becoming very stormy, on the 12th September they quitted these shores for Lapland, and finally reached Archangel on the 23rd September.

Although but six weeks were spent on the coasts of Novaïa Zemlia, and no opportunity was afforded for a further examination of its shores, still the voyage was far from being unproductive in scientific results, and especially in natural history. These may already be partly found, and will be more fully developed hereafter, in M. Baer's reports to the Academy of Sciences at St. Petersburg, and in which he has also discussed the latitudes and longitudes of the various points, the result of which is shown in the chart, and has entered fully into the meteorology and climate of Novaïa Zemlia; but our object is entirely with the physical geography of the islands. On reference then to the chart, it appears from the recent examinations that Novaïa Zemlia stretches

in a N.N.E. and S.S.W. direction, slightly curving to the westward, nearly 400 geographical miles in extent, between the parallels of  $70\frac{1}{2}^{\circ}$  and  $76\frac{1}{2}^{\circ}$  N. and  $52^{\circ}$  and  $66^{\circ}$  long. E. of Greenwich, with an average breadth of 50 miles, or about one-half the size hitherto represented on all our maps. The land on the western side of the islands is mountainous, rising generally 2000 feet above the sea; the mountains overhanging the Matotshkin-Shar both on the north and south side reach respectively 3156, 2547, 3204, and that nearer the eastern entrance of the strait full 3475 feet above the level of the sea: they are chiefly composed of a very black clay-slate: in the more southern portions of the islands near the Kostin Shar, grey primitive limestone prevails, similar to that found in the northern parts of the Ural chain, of which Novaïa Zemlia may be considered a northern prolongation.

The eastern shores are comparatively low and barren. The various portions of the coast are coloured on the original chart to show by whom they were explored; whence we learn that nearly all the west coast was copied from Lütke's chart; that all the east coast of the southern isle was explored by Pachtussoff in 1832-3; that the Matotshkin-Shar, and the east coast, from  $73\frac{1}{4}^{\circ}$  to  $75^{\circ}$ , was examined by Pachtussoff and Ziwlka in 1834-5; from  $72^{\circ}$  to  $73^{\circ}$  on the west coast is the information derived from Bashmakoff, a walrus-hunter; and the rest of the dotted line, or the north-eastern portion of the coast, that obtained from other walrus-hunters.

About 100 miles of the north-eastern shore yet remain unexplored; but we learn from a letter from M. Baer to Dr. Berghaus,\* that the master Ziwlka was to sail again this summer with two vessels, with the intention of wintering at Bucklige Island, in  $75^{\circ} 45' N.$ , on the west coast, and in the year 1839 was to use all his exertions to sail round the north-eastern point of Novaia Zemlia, and there complete the discoveries carried on in so persevering and praiseworthy a manner by the Russian government.

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\* Annalen, No. 154.

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